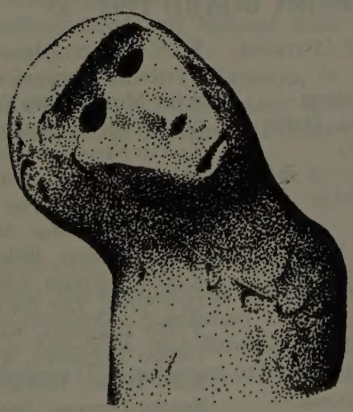
ISSN 0032-8332

PRIMATES

A JOURNAL OF PRIMATOLOGY

Vol. 36 1995



PUBLISHED QUARTERLY BY

JAPAN MONKEY CENTRE

PRIMATES A JOURNAL OF PRIMATOLOGY

FOUNDED 1957

PRIMATES is an international journal of primatology, whose general object is to provide facilities for the elucidation of the entire aspect of primates in connection with man. It publishes original papers that contribute to the development of the scientific study of primates and its scope embraces work in all fields of investigation, such as morphology, physiology, psychology, behavior, ecology, sociology, systematics, evolution, laboratory primate medicine, etc. In addition to original papers, brief notes, research reports, and review articles are included.

PRIMATES is published quarterly, and four numbers form one volume.

Persons who wish to contribute are advised to study the *Information for Contributors* printed inside the back cover and to follow the requested procedure carefully.

EDITORIAL BOARD 1993–95

Chief Editor: MASAO KAWAI, *Nihon Fukushi University*

Editors:

TOSHIO ASANO, *Aichi University*
AKIYOSHI EHARA, *Sugiyama Jogakuen Univ.*
NAOSUKE ITOIGAWA, *Osaka University*
MITSUO IWAMOTO, *Japan Monkey Centre*
TOSHITAKA IWAMOTO, *Miyazaki University*
KOSEI IZAWA, *Miyagi Univ. of Education*
TAKAYOSHI KANO, *Kyoto University*
TETSURO MATSUZAWA, *Kyoto University*
HIDEO NIGI, *Nippon Vet. & Anim. Sci. Univ.*
TOSHISADA NISHIDA, *Kyoto University*
KEN NOZAWA, *Chukyo University*
HIDEYUKI OHSAWA, *Kyoto University*
YUKIMARU SUGIYAMA, *Kyoto University*

ADVISORY BOARD 1993–95

R. I. M. DUNBAR, *The University of Liverpool*
TOMOO ENOMOTO, *Tokai University*
LINDA M. FEDIGAN, *University of Alberta*
A. H. HARCOURT, *Univ. of California, Davis*
MARIKO HASEGAWA, *Senshu University*
TOSHIKAZU HASEGAWA, *The University of Tokyo*
MOMOKI HIRAI, *The University of Tokyo*
SHIGEO HONJO, *Aichi University*
GOICHI ISHIMOTO, *Mie Univ. Sch. of Medicine*
KENJI KAWANAKA, *Okayama Univ. of Science*
TASUKU KIMURA, *Kyoto University*
NAOKI KOYAMA, *Kyoto University*
H. KUDO-HIROTANI, *Kanagawa Pref. Museum*
TAMAKI MARUHASHI, *Musashi University*
W. A. MASON, *Univ. of California, Davis*
KIYOAKI MATSUBAYASHI, *Kyoto University*
W. C. MCGREW, *Miami University*
E. W. MENZEL, JR., *State Univ. of New York*
TETSUHIRO MINAMI, *Osaka University*
AKIO MORI, *Kyoto University*
UMEYO MORI, *Nagoya Bunri College*
KOICHI NEGAYAMA, *Mukogawa Women's Univ.*
MASUMI NOZAKI, *Niigata University*
JOHN F. OATES, *The City Univ. of New York*
J.-J. PETTER, *Mus. Nat. Hist. Naturelle*
J. G. ROBINSON, *Wildlife Conserv. International*
KAREN B. STRIER, *Univ. of Wisconsin, Madison*
GEN SUWA, *The University of Tokyo*
YUKIO TAKAHATA, *Naruto Univ. of Education*
OSAMU TAKENAKA, *Kyoto University*
KEIJI TERAO, *Tsukuba Pri. Ctr. Med. Sci.*
SHIGEO UEHARA, *Sapporo University*
RICHARD WRANGHAM, *Harvard University*
JUICHI YAMAGIWA, *Kyoto University*

Contributions, materials for announcement, and new books for review should be sent to:
Dr. MASAO KAWAI, Chief Editor, PRIMATES
Japan Monkey Centre, Inuyama, Aichi, 484 Japan

The annual subscription price including postage: Inland, ¥22,700 (including Consumption Tax) for institutions, ¥15,500 (including Consumption Tax) for individuals; abroad, ¥22,000 for institutions, ¥15,000 for individuals. As to the prices of back issues, please send inquiries to the Editorial Office. Subscription orders, remittances, and business correspondence should be addressed to:

PRIMATES, Editorial Office
Japan Monkey Centre, Inuyama, Aichi, 484 Japan

Published by JAPAN MONKEY CENTRE, Inuyama, Aichi, Japan, 1995 ©
Director: MITSUO IWAMOTO
Printed by KUZO DOGURA, Kyoto

CONTENTS

Vol. 36 No. 1, January 1995

KUMAR, AJITH: Birth Rate and Survival in Relation to Group Size in the Lion-tailed Macaque, *Macaca silenus* 1
MORI, AKIO: Rank and Age Related Feeding Strategy Observed Through Field Experiments in the Koshima Group of Japanese Macaques 11
PERRY, SUSAN and JOSEPH H. MANSON: A Comparison of the Mating Behavior of Adolescent and Adult Female Rhesus Macaques (*Macaca mulatta*) 27
CLARKE, A. S., N. M. CZEKALA, and D. G. LINDBURG: Behavioral and Adrenocortical Responses of Male Cynomolgus and Lion-tailed Macaques to Social Stimulation and Group Formation 41
MENDOZA-GRANADOS, DOMINGO and VOLKER SOMMER: Play in Chimpanzees of the Arnhem Zoo: Self-serving Compromises 57
FERGUSON, WALTER W.: A New Species of the Genus *Homo* (Primates: Hominidae) from the Plio/Pleistocene of Koobi Fora, in Kenya 69
KIMURA, TASUKU and YUZURU HAMADA: Retardation of Bone Development in the Koshima Troop of Japanese Macaques 91
KOBAYASHI, SHUJI: A Phylogenetic Study of Titi Monkeys, Genus *Callicebus*, Based on Cranial Measurements: 1. Phyletic Groups of *Callicebus* 101
TERAO, KEIJI, MASAAKI HAMANO, and TAKAMASA KOYAMA: The Repeated Procedure of Weaning and Peer Group Formation Causes Accumulation of Stress and Changes of Plasma Cortisol Level and Natural Killer Activity in Squirrel Monkeys (*Saimiri sciureus*) 121
SCHNEIDER, M. P. C., H. SCHNEIDER, M. I. C. SAMPAIO, N. M. CARVALHO-FILHO, F. ENCARNACIÓN, E. MONTOYA, and F. M. SALZANO: Biochemical Diversity and Genetic Distances in the Pitheciinae Subfamily (Primates, Platyrrhini) 129

Short Communications

REN, RENMEI, KANGHUI YAN, YANJIE SU, HANJIN QI, BING LIANG, WENYONG BAO, and FRANS B. M. DE WAAL: The Reproductive Behavior of Golden Monkeys in Captivity (*Rhinopithecus roxellanae roxellanae*) 135
WALRAVEN, VERA, LINDA VAN ELSACKER, and RUDOLF VERHEYEN: Reactions of a Group of Pygmy Chimpanzees (*Pan paniscus*) to Their Mirror-images: Evidence of Self-recognition 145

Date of Publication: January 31, 1995

Vol. 36 No. 2, April 1995

NISHIHARA, TOMOAKI: Feeding Ecology of Western Lowland Gorillas in the Nouabalé-Ndoki National Park, Congo 151
TAKAHATA, YUKIO, NAOKI KOYAMA, and SHIGERU SUZUKI: Do the Old Aged Females Experience A Long Post-reproductive Life Span?: The Cases of Japanese Macaques and Chimpanzees 169
TUTIN, CAROLINE E. G., REBECCA HAM, and DOROTHEA WROGEMANN: Tool-use by Chimpanzees (*Pan t. troglodytes*) in the Lopé Reserve, Gabon 181

SUGIYAMA, YUKIMARU: Tool-use for Catching Ants by Chimpanzees at Bossou and Monts Nimba, West Africa 193
NISHIDA, TOSHISADA, KAZUHIKO HOSAKA, MIHO NAKAMURA, and MIYA HAMAI: A Within-group Gang Attack on a Young Adult Male Chimpanzee: Ostracism of an Ill-mannered Member? 207
MARKUS, NICOLA and DAVID B. CROFT: Play Behaviour and Its Effects on Social Development of Common Chimpanzees (*Pan troglodytes*) 213
LEFEBVRE, LOUIS: Culturally-transmitted Feeding Behaviour in Primates: Evidence for Accelerating Learning Rates 227
MCGREW, WILLIAM C. and JOANNE WEBSTER: Birth Seasonality in Cotton-top Tamarins (*Saguinus oedipus*) Despite Constant Food Supply and Body Weight 241
MORO, MAKOTO, RYUZO TORII, HITOSHI KOIZUMI, YOICHI INADA, YASUO ETOH, HIROSHI MIYATA, and YOSHIKUNI TANIOKA: Serum Levels of Prolactin During the Ovarian Cycle, Pregnancy, and Lactation in the Common Marmoset (*Callithrix jacchus*) 249

Short Communications

HEYMANN, ECKHARD W.: Urine Washing and Related Behaviour in Wild Moustached Tamarins, *Saguinus mystax* (Callitrichidae) 259
BRENT, LINDA, MOLLIE A. BLOOMSMITH, and STANLEY D. FISHER: Factors Determining Tool-using Ability in Two Captive Chimpanzee (*Pan troglodytes*) Colonies 265
MASON, ANGELA M., LINDA D. WOLFE, and JEFFERY C. JOHNSON: Hand Preference in the Sifaka (*Propithecus verreauxi coquereli*) During Feeding in Captivity 275

Research Reports

PUERTAS, PABLO E., ROLANDO AQUINO, and FILOMENO ENCARNACION: Sharing of Sleeping Sites Between *Aotus vociferans* with Other Mammals in the Peruvian Amazon 281
FERRARI, STEPHEN F.: Observations on *Chiropotes albinasus* from the Rio dos Marmelos, Amazonas, Brazil 289

Book Review 295

Date of Publication: April 30, 1995

Vol. 36 No. 3, July 1995

BARD, KIM A.: Sensorimotor Cognition in Young Feral Orangutans (*Pongo pygmaeus*) 297
MAHANEY, WILLIAM C., ANNA STAMBOLIC, MARY KNEZEVICH, R. G. V. HANCOCK, SUSAN AUFREITER, KANDIAH SANMUGADAS, M. J. KESSLER, and M. D. GRYNPAS: Geophagy Amongst Rhesus Macaques on Cayo Santiago, Puerto Rico 323
MENDES PONTES, ANTONIO ROSSANO and MARIA ADELIA OLIVEIRA MONTEIRO DA CRUZ: Home Range, Intergroup Transfers, and Reproductive Status of Common Marmosets *Callithrix jacchus* in a Forest Fragment in North-eastern Brazil 335
PFALZER, SUSANNE and GÜNTER EHRET: Social Integration of a Bonobo Mother and Her Dependent Daughter into an Unfamiliar Group 349
DIGBY, LESLIE J.: Social Organization in a Wild Population of *Callithrix jacchus*: II. Intragroup Social Behavior 361

IDANI, GEN'ICHI: Function of Peering Behavior Among Bonobos (*Pan paniscus*) at Wamba, Zaire 377
NAKAMICHI, MASAYUKI, YASUO KOJIMA, NAOSUKE ITOIGAWA, SHINJI IMAKAWA, and SHOJI MACHIDA: Interactions Among Adult Males and Females Before and After the Death of the Alpha Male in a Free-ranging Troop of Japanese Macaques 385
O'CONNELL, SANJIDA M.: Empathy in Chimpanzees: Evidence for Theory of Mind? 397
ENOMOTO, TOMOO, KIYOAKI MATSUBAYASHI, YASUKAZU NAGATO, and MAYUMI NAKANO: Seasonal Changes in Spermatogenic Cell Degeneration in the Seminiferous Epithelium of Adult Japanese Macaques (*Macaca fuscata fuscata*) 411
BERGUIDO, FRANCISCO, MICHELLE KAGEY, CHARLES F. HOWARD, JR., and SUSAN R. STAPLETON: Insulin-like Growth Factor I Levels Decrease in the Development of Diabetes in *Macaca nigra* 423
PERO DEL, M., S. CROVELLA, P. CERVELLA, G. ARDITO, and Y. RUMPLER: Phylogenetic Relationships Among Malagasy Lemurs as Revealed by Mitochondrial DNA Sequence Analysis 431

Short Communication

O'CONNELL, SANJIDA M. and GUY COWLISHAW: The Post-copulation Withdrawal Response in Female Baboons: A Functional Analysis 441

Research Report

GEISSMMANN, THOMAS: The Yellow-cheeked Gibbon (*Hylobates gabriellae*) in Nam Bai Cat Tien (Southern Vietnam) Revisited 447

Book Reviews 457

Date of Publication: July 31, 1995

Vol. 36 No. 4, October 1995

KUESTER, JUTTA, ANDREAS PAUL, and JOACHIM ARNEMANN: Age-related and Individual Differences of Reproductive Success in Male and Female Barbary Macaques (*Macaca sylvanus*) 461
HASHIMOTO, CHIE: Population Census of the Chimpanzees in the Kalinzu Forest, Uganda: Comparison Between Methods with Nest Counts 477
YAMAKOSHI, GEN and YUKIMARU SUGIYAMA: Pestle-pounding Behavior of Wild Chimpanzees at Bossou, Guinea: A Newly Observed Tool-using Behavior 489
FORSTER, F. C.: Exploratory Behavior and Learning in Laboratory Marmosets (*Callithrix jacchus jacchus*): Comparisons Between Experimental-cage and Home-cage Activity 501
NICHOLSON, INDIA S. and JAY E. GOULD: Mirror Mediated Object Discrimination and Self-directed Behavior in a Female Gorilla 515
SENTURIA, SAM J.: Morphometry and Allometry of the Primate Humerus 523
BASSOFF, TRINA B.: Behavioral Changes Across the Menstrual Cycle in Isosexual Groups of Bonnet Macaques (*Macaca radiata*) 549
MURAYAMA, YUICHI, HIROAKI SHIBATA, TAKEYUKI NAGASHIMA, MIKI TAKUWA, KEIJI TERAO, and ATSUO NOGUCHI: Chromosome Sorting of Primates: Isolation and Identification of Y Chromosome in Green Monkeys 563

Short Communications

TAKAHATA, YUKIO, NAOKI KOYAMA, MICHAEL A. HUFFMAN, KOSHI NORIKOSHI, and HISAYO SUZUKI: Are Daughters More Costly to Produce for Japanese Macaque Mothers?: Sex of the Offspring and Subsequent Interbirth Intervals 571
YEAGER, CAREY P.: Does Intraspecific Variation in Social Systems Explain Reported Differences in the Social Structure of the Proboscis Monkey (*Nasalis larvatus*)? 575
SWINDLER, DARIS R.: Canine Root Development and Morphology in *Macaca nemestrina* 583

Research Report

MARCHESI, PAUL, NATHALIE MARCHESI, BARBARA FRUTH, and CHRISTOPHE BOESCH: Census and Distribution of Chimpanzees in Côte D'Ivoire 591

Book Review 609

Information 611

Date of Publication: October 31, 1995

7 253HI 812
XL
4/97 31249-200 NULB